

What is Claimed is:

1. A session relay method for relaying a session between a data transmission terminal and a data reception terminal, comprising the steps of:

5 a step of monitoring data amount within a data storing unit;

a step of requiring a receivable amount to take a value smaller than empty data amount of the data storing unit, obtained according to said data amount; and

10 a step of informing the data transmission terminal of said receivable amount.

2. A session relay method for relaying a session between a data transmission terminal and a data reception terminal, comprising the steps of:

5 a step of determining transmissive amount in data transmission processing, according to a judgment result whether transmission amount is reduced or not, when transmission data based on the monitoring result of the data amount within the data storing unit and a network situation, does not exist for a predetermined  
10 period.

3. A session relay method for relaying a session between a data transmission terminal and a data

reception terminal, comprising the steps of:

5 a step of monitoring data amount within a data storing unit;

a step of requiring a receivable amount to take a value smaller than empty data amount of the data storing unit, obtained according to said data amount as a transmissive amount to be informed to the data  
10 transmission terminal; and

a step of determining data transfer amount in data transmission processing, according to a judgment result whether transmission amount is reduced or not when transmission data based on the monitoring result of  
15 the data amount within the data storing unit and a network situation does not exist for a predetermined period.

4. The session relay method as set forth in Claim 1 or Claim 3, further comprising

a step of setting a plurality of thresholds for said empty data amount within the data storing unit  
5 and determining a receivable amount to take a value smaller than said empty data amount within the data storing unit, according to another function within a range of the respective thresholds.

5. The session relay method as set forth in Claim 1 or Claim 3, comprising

a step of setting a plurality of thresholds  
for said empty data amount within the data storing unit  
and fixing a value in proportion to one divided by  
positive of said empty data amount within the data  
storing unit, a value in proportion to a value  
multiplied by positive of said empty data amount within  
the data storing unit, a fixed value less than the empty  
data amount within the data storing unit, or a value  
required in these combination, as a receivable amount,  
within the range of the respective thresholds.

6. The session relay method as set forth in  
Claim 1 or Claim 3, comprising

a step of setting a plurality of thresholds  
for said empty data amount within the data storing unit  
and fixing as a receivable amount, a value of a function  
which decreases monotonously according as the empty data  
amount within the data storing unit decreases, which is  
continuous on the whole and gets a value smaller than  
said empty data amount within the data storing unit,  
using the individual function for each threshold.

7. The session relay method as set forth in  
Claim 2 or Claim 3, comprising

a step of judging whether the transmissive  
amount is reduced or not, according to information for  
specifying a user such as IP address, ID of VLAN, and

MAC address, information for specifying an application  
such as port number of TCP, and information for  
specifying priority of data such as TOS field in the IP  
header, priority in the VLAN header, and priority in the  
MPLS header.

8. The session relay method as set forth in  
Claim 2 or Claim 3, comprising  
a step of judging that the transmissive amount  
is initialized when the data storing unit continues  
empty of data for a predetermined period.

9. The session relay method as set forth in  
Claim 2 or Claim 3, comprising  
a step of judging that the transmissive amount  
is initialized when the data storing unit continues  
empty of data for a predetermined period, said  
predetermined period being determined according to the  
information for specifying a user such as IP address, ID  
of VLAN, and MAC address, the information for specifying  
an application such as port number of TCP, and the  
information for specifying priority of data such as TOS  
field in IP header, priority in VLAN header, and  
priority in MPLS header.

10. The session relay method as set forth in  
Claim 2 or Claim 3, comprising a step of judging that

the transmissive amount is not initialized.

11. A session relaying apparatus for relaying a session between a data transmission terminal and a data reception terminal, comprising:

5 a unit which receives data transmitted from the data transmission terminal;

a unit which monitors data amount within a data storing unit;

a unit which requires a receivable amount to take a value smaller than said data amount; and

10 a unit which creates an acknowledgement signal based on said receivable amount and transmits the signal to the data transmission terminal.

12. A session relaying apparatus for relaying a session between a data transmission terminal and a data reception terminal, comprising:

5 a unit which receives an acknowledgement signal from the data reception terminal;

a unit which monitors data amount within a data storing unit;

10 an initialization judging unit which judges whether transmission amount is reduced or not when transmission data does not exist for a predetermined period based on a network situation; and

a unit which determines transmissive amount

according to the monitoring result of said data monitor  
and the judgment of said initialization judging unit and  
15 transmits the data.

13. A session relaying apparatus for relaying  
a session between a data transmission terminal and a  
data reception terminal, comprising:

a unit which receives data transmitted from  
5 the data transmission terminal;

a unit which monitors data amount within a  
data storing unit;

a unit which requires a receivable amount to  
take a value smaller than said data amount;

10 a unit which informs the data transmission  
terminal of said receivable amount;

a unit which creates an acknowledgement signal  
based on said informed amount;

15 a unit which receives an acknowledgement  
signal from the data reception terminal;

an initialization judging unit which judges  
whether transmission amount is reduced or not when  
transmission data does not exist for a predetermined  
period based on a network situation; and

20 a unit which determines transmissive amount  
according to the monitoring result of said data monitor  
and the judgment of said initialization judging unit and  
transmits the data.

14. The session relaying apparatus as set forth in Claim 11 or Claim 13, in which

a plurality of thresholds is set for said empty data amount within the data storing unit, and a  
5 receivable amount is determined to take a value smaller than said empty data amount within the data storing unit, according to another function within a range of the respective thresholds.

15. The session relaying apparatus as set forth in Claim 11 or Claim 13, in which

a plurality of thresholds are set for said empty data amount within the data storing unit, and a  
5 value in proportion to one divided by positive of said empty data amount within the data storing unit, a value in proportion to a value multiplied by positive of said empty data amount within the data storing unit, a fixed  
10 value less than said empty data amount within the data storing unit, or a value required in these combination, is fixed as a receivable amount within the range of the respective thresholds.

16. The session relaying apparatus as set forth in Claim 11 or Claim 13, in which

a plurality of thresholds are set for said empty data amount within the data storing unit, and a

5 value of a function which decreases monotonously  
according as said empty data amount within the data  
storing unit decreases, which is continuous on the whole  
and gets a value smaller than the empty data amount  
within the data storing unit, is fixed as the receivable  
10 amount, using the individual function for each threshold.

17. The session relaying apparatus as set  
forth in Claim 12 or Claim 13, in which

whether the transmissive amount is reduced or  
not, is judged, according to information for specifying  
5 a user such as IP address, ID of VLAN, and MAC address,  
information for specifying an application such as port  
number of TCP, and information for specifying priority  
of data such as TOS field in the IP header, priority in  
the VLAN header, and priority in the MPLS header.

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18. The session relaying apparatus as set  
forth in Claim 12 or Claim 13, in which

said initialization judging unit judges that  
the transmissive amount is initialized when the data  
5 storing unit continues empty of data for a predetermined  
period.

19. The session relaying apparatus as set  
forth in Claim 12 or Claim 13, in which

said initialization judging unit judges that



the transmissive amount is initialized when the data  
5 storing unit continues empty of data for a predetermined  
period, said predetermined period being determined  
according to the information for specifying a user such  
as IP address, ID of VLAN, and MAC address, the  
information for specifying an application such as port  
10 number of TCP, and the information for specifying  
priority of data such as TOS field in IP header,  
priority in VLAN header, and priority in MPLS header.

20. The session relaying apparatus as set  
forth in Claim 12 or Claim 13, in which  
said initialization judging unit judges that  
the transmissive amount is not initialized.

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21. A session relay program for relaying a  
session between a data transmission terminal and a data  
reception terminal, executed on a computer, comprising  
the function of:

5 a function of monitoring data amount within a  
data storing unit, requiring a receivable amount to take  
a value smaller than empty data amount of the data  
storing unit, obtained according to said data amount,  
and informing the data transmission terminal of said  
10 receivable amount.

22. A session relay program for relaying a

session between a data transmission terminal and a data reception terminal, executed on a computer, comprising the function of:

5                   a function of determining transmissive amount  
in data transmission processing, according to a judgment  
result whether transmission amount is reduced or not,  
when transmission data based on the monitoring result of  
the data amount within the data storing unit and a  
10 network situation, does not exist for a predetermined  
period.

23. A session relay program for relaying a session between a data transmission terminal and a data reception terminal, executed on a computer, comprising the function of:

5                   a function of monitoring data amount within a  
data storing unit, requiring a value smaller than empty  
data amount of the data storing unit, obtained according  
to said data amount as a receivable amount to be  
informed to the data transmission terminal, and  
10 determining data transfer amount in data transmission  
processing, according to a judgment result whether  
transmission amount is reduced or not when transmission  
data based on the monitoring result of the data amount  
within the data storing unit and a network situation  
15 does not exist for a predetermined period.

24. The session relay program as set forth in Claim 21 or Claim 23, comprising

5 a function of setting a plurality of thresholds for said empty data amount within the data storing unit and determining a receivable amount to take a value smaller than said empty data amount within the data storing unit, according to another function within a range of the respective thresholds.

25. The session relay program as set forth in Claim 21 or Claim 23, comprising

5 a function of setting a plurality of thresholds for said empty data amount within the data storing unit and fixing a value in proportion to one divided by positive of said empty data amount within the data storing unit, a value in proportion to a value multiplied by positive of said empty data amount within the data storing unit, a fixed value less than the empty data amount within the data storing unit, or a value  
10 required in these combination, as a receivable amount, within the range of the respective thresholds.

26. The session relay program as set forth in Claim 21 or Claim 23, comprising

5 a function of setting a plurality of thresholds for said empty data amount within the data storing unit and fixing as the receivable amount, a

value of a function which decreases monotonously  
according as the empty data amount within the data  
storing unit decreases, which is continuous on the whole  
and gets a value smaller than said empty data amount  
10 within the data storing unit, using the individual  
function for each threshold.

27. The session relay program as set forth in  
Claim 22 or Claim 23, comprising  
a function of judging whether the transmissive  
amount is reduced or not, according to information for  
5 specifying a user such as IP address, ID of VLAN, and  
MAC address, information for specifying an application  
such as port number of TCP, and information for  
specifying priority of data such as TOS field in the IP  
header, priority in the VLAN header, and priority in the  
10 MPLS header.

28. The session relay program as set forth in  
Claim 22 or Claim 23, comprising  
a function of judging that the transmissive  
amount is initialized when the data storing unit  
5 continues empty of data for a predetermined period.

29. The session relay program as set forth in  
Claim 22 or Claim 23, comprising  
a function of judging that the transmissive

amount is initialized when the data storing unit  
5 continues empty of data for a predetermined period, said  
predetermined period being determined according to the  
information for specifying a user such as IP address, ID  
of VLAN, and MAC address, the information for specifying  
an application such as port number of TCP, and the  
10 information for specifying priority of data such as TOS  
field in IP header, priority in VLAN header, and  
priority in MPLS header.

30. The session relay program as set forth in  
Claim 22 or Claim 23, comprising a function of judging  
that the transmissive amount is not initialized.